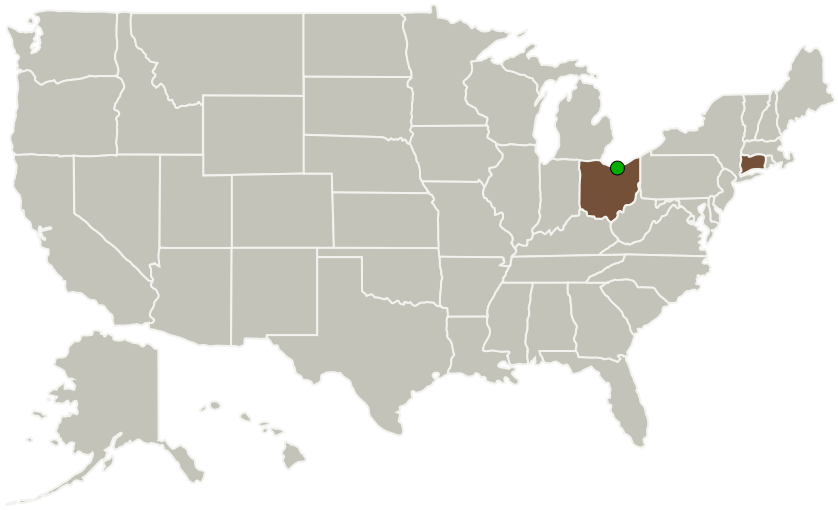
DURACON - Variable Emissivity Broadband Coatings for Liquid Propellant Rocket Nozzles, Phase I

Completed Technology Project (2010 - 2010)

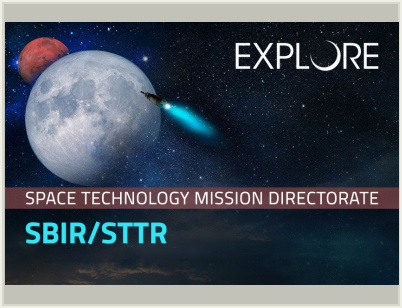
Project Introduction

The need exists for a fast drying, robust, low gloss, black, high emissivity coating that can be applied easily on aircraft rocket nozzles and nozzle extensions. Based on their 40+ years of experience with loaded polymers, particle dispersion and surface gloss control, scientists at Materials Technologies Corporation recently developed DURACON□, a high emissivity, high thermal diffusivity, low-gloss infrared black coating. We now propose an innovative process for the deposition of a current DURACON formulation to enhance its emmittance mass index, ruggedness, uniformity, as well as adhesion to the substrate at extremely high temperatures to the levels desired by the NASA.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
Materials Technologies Corporation	Lead Organization	Industry Minority-Owned Business, Small Disadvantaged Business (SDB)	Monroe, Connecticut
Glenn Research Center(GRC)	Supporting Organization	NASA Center	Cleveland, Ohio



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Primary U.S. Work Locations	
Connecticut	Ohio

Project Transitions

January 2010: Project Start

July 2010: Closed out

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

Materials Technologies Corporation

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

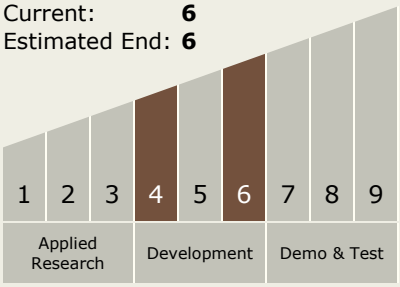
Carlos Torrez

Principal Investigator:

Yogesh Mehrotra

Technology Maturity (TRL)

Start: **4**
Current: **6**
Estimated End: **6**



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Technology Areas

Primary:

- TX01 Propulsion Systems
  - TX01.1 Chemical Space Propulsion
    - TX01.1.3 Cryogenic

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System